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Abstract

The objective of this study is to shed light on the determinants of foreign direct investment (FDI) in the economy of Benin Republic. In view of this, time series data analysis with a single-equation econometric model for the country 1980 to 2010 is utilised. We discover that infrastructure development is found to be one of the most important determinant factors that attract FDI to the country. The other important variables which influence FDI are found to be per capita GDP, moderate exchange rate volatility and trade openness. Economic instability (proxied by the volatility of prices), human capital and financial development are other important factors affecting negatively the inflows of FDI. Policy handles are not only direct but also powerful: they reduce political risk, ensure property rights, most importantly enhance growth in the market size, as well as wage moderation, lower corporate tax rates, and ensure full integration of the economy of Benin into the world economy. However, financial development needs to be improved for an increased level as this will enable this economy gain more from FDI, likewise, suggesting that the impact of FDI can be enhanced through financial development. The model used to obtain these results is found to be structural stable.

Keywords: *Foreign Direct Investment; Benin Republic, financial development, infrastructure development.*

JEL classification: F21 (03; F2)

1.0 Introduction

The main purpose of this paper is to provide an overall analysis of recent studies that both focus on FDI and to examine the various factors that attract or deter FDI in Benin, in order to find answers to the following question: What are the determinants/impediments of FDI to this developing country? Although there is a dearth of recent research on FDI determinants to Benin but the empirical investigation on the issue is not confined to the work done only for Benin. Therefore, further evidence on the factors that affect the inflows of FDI in Beninese economy will be provided based on other references on developing countries and Benin drawn out of the literature review. In view of the foregoing, examining relationship between these variables and FDI in Benin is imperative and compelling. Apart from this introductory section, the paper is subdivided into four other sections. Section 2 reviews the existing literature, section 3 provides the methodology, section 4 presents the empirical results, section 5 deals with the findings while section 6 presents the policy implications.

1.1 Research Questions

This paper sets out to answer the following research questions:

- i. What are the key determinants of foreign direct investment inflows into the Beninese economy and how can these flows be maximised?
- ii. Specifically, do per capita GDP, exchange rate volatility, financial development, infrastructure development, human resource management, trade openness, macroeconomic environment and political stability affect positively FDI inflows in Benin Republic during the period 1980-2010?

2.0 Review of Empirical Literature

The objective of this section is to review the existing knowledge about the relationship between FDI and some of its major determinants. Section 2.1 examines the theoretical findings while Section 2.2, the empirical ones.

2.1 Theoretical review of FDI Determinants

Although the first theoretical studies of the determinants of FDI dates back to Adam Smith, Stuart Mill and Torrens, however, one of the first to address the issue is Ohlin (1933). According to this author, FDI is motivated mainly by the possibility of high profitability in growing markets, along with the possibility of financing these investments at relatively low rates of interest in the host country. Other determinants are the necessity to overcome trade barriers and to secure sources of raw materials. Theories of FDI may be classified under the following headings: the production cycle theory of Venon, the theory of exchange rates on imperfect capital markets, the internalisation theory, and the eclectic paradigm of Dunning.

Theories of Foreign Direct Investment

In order to realize advances in FDI thinking, it is important to review theories relating to FDI. The view of Agarwal (1980) cited in Moosa (2002) will be considered, states that FDI theories should be regarded as hypotheses, due to the fact that there are plethora of competing theories with differing degrees of power. The major theories of FDI are: (1) Strategic behaviours, (2) Product life cycle model, (3) Industrial organization, (4) Internalisation, and (5) Eclectic Paradigm.

Theory 1: Strategic Behaviours

Knickerbocker (1973) developed a behaviour related approach to explain FDI in foreign markets. Knickerbocker asserts that firms that operate within oligopolistic industries tend to follow the FDI moves of one another. This behaviour is an oligopolistic reaction where, 'the decision of one firm to invest overseas raises competing firms' incentives to invest in the same country'. FDI by one firm into a foreign country triggers other firms to follow suit. In this follow-the-leader type behaviour, the follower is looking to minimize the first mover's overall competitive advantage. When conducting FDI in new foreign markets, oligopolistic firms do not only seek to be better than their rivals, but also, they seek to increase their own profitability by exploring new opportunities. Knickerbocker states that investment in overseas markets can be characterized in one or more of the following ways: movement to supply the native market, investment to gain resources, and investment to gain a strategic export platform.

The reason one firm follows another is certainly logical, however Knickerbocker does not explain the triggers behind the initial investment by the first firm to move. Therefore, it is difficult to use Knickerbocker's theory to correctly predict what actually motivated the first firm's investment decision and why exporting or licensing are disregarded as alternatives.

Theory 2: Product Life Cycle

This concept is developed by Vernon (1966) in an effort to explain the overseas expansion behaviour of American MNEs after the Second World War. In this theory, the justification for FDI and expansion is due to the stage in the product's life, not the country where the FDI takes place.

Vernon (1966) proposed three stages in a product's life. First, is the new product. Production happens at home due to the need for synthesis between the production and R&D teams, and close proximity to potential buyers. Price at home is inelastic at this stage because of increased demand, and innovative products can command a higher price. Here, the product can be advanced with the help of feedback from home customers. The second issue is the maturing product. The product has started to become more established and export is taking place in developed countries as demand emerges. With an increase in demand, competition appears and innovative firms resort to FDI in developed countries to meet the needs. of the demand. This action is taken to support sales and profits as the market and competition increase. At present, the country where the innovation is born is the net exporter and the foreign countries are net importers. The third stage is product standardization. The product and the producing processes are no longer monopolized by the innovating firm. Competition on the basis of price pressures the innovating firm, and the decision is made to invest in developing countries in an effort to take back a cost advantage.

Theory 3: Industrial Organization

One of the first persons to highlight the makeup of the market and the characteristics of inward investing firms when explaining FDI is Stephen Hymer (1976). He claims that if incoming foreign MNEs are the same as their already established domestic counterparts, they will not gain from entering the domestic market. This is because the incoming MNE will be hit by higher costs, including communication and transport, bringing in staff, cultural barriers, language and the lack of an established network with the

government and local businesses. Therefore, Hymer proposes incoming firms must have some specific advantage which will counter the associated challenges of entering a new country (Moosa 2002).

Kindleberger (1969) suggests the advantage possessed by a firm needs for FDI to be suitable and appropriate for transfer, and powerful enough to overcome the foreign disadvantages. Licensing such an advantage to a foreign firm could result in an unwanted transfer of knowledge. As with any theory in the field of FDI, the time and location where it is conceptualized features, heavily on its usefulness thereafter.

Critics point out that one of the main shortcomings of this theory is that it doesn't clearly consider why expanding firms choose not to make the most of their advantages by increasing production in their home countries and exporting to foreign markets, which could be a substitute for FDI. The theory does explain why firms choose to invest abroad, but it does not explain why investing firms choose country A over country B, and credit must be given here to Vernon's theory for addressing that (Moosa 2002). Despite crucial limitations, Hymer's theory is powerful and provides a pioneering foundation (Pitelis, 2006).

Theory 4: Internalisation

Internalisation has been conceptualized by Coase (1937) who finds that FDI and associated internalisation take place when transaction costs (i.e. the costs of negotiating, enforcing and overseeing a contract) are high, and in such cases firms internally can be a suitable substitute for markets. Alternatively, when these costs are low, this positively supports the case for working in partnership with other firms, being part of the market, and using mutually beneficial licensing and franchising agreements. The firm is left to decide if it is more cost effective to own and run a facility overseas (internalize) or if it is better to establish a contract with a foreign firm to run, license or franchise it on their behalf (Wall and Rees, 2004).

The internalisation theory is developed from the imperfections in the market. Internalisation can be seen as a form of vertical integration, where the firm takes ownership of duties and/or goods that it formerly relied on a third party to provide. The internalisation argument provides reasons why firms prefer FDI in some circumstances over importing and exporting, and why they may refrain from licensing or franchising (Moosa 2002). The internalisation argument does not appear to have any theoretical foundations, and Rugman (1986) supports this by stating that, 'Due to its generality, internalisation can be seen as more of an approach than a theory.' Also, with internalisation, centralization is promoted. This may not be beneficial in all firms, especially those that are innovative.

Theory 5: Eclectic Paradigm

In economics, the eclectic paradigm is a theory known as the OLI-Model or OLI-Framework. It is a further development of the theory of internalisation and published by Dunning in 1980. The theory of internalisation itself is based on the transaction cost theory. This theory says that transactions are made within an institution if the transaction costs on the free market are higher than the internal costs. This process is called internalisation. For Dunning, not only the structure of organization is important. He added three more factors to the theory: (a) Ownership advantages (trademark, production technique, entrepreneurial skills, returns to scale). Ownership advantages refer to the competitive advantages of the enterprises seeking to engage in FDI.

Table 1: OLI Advantages and Forms of market entry

		Categories of Advantages		
		Ownership Advantage	Internalisation Advantages	Location Advantages
Forms of market entry	Licensing	Yes	No	No
	Exports	Yes	Yes	No
	FDI	Yes	Yes	Yes

Source: Extracted from Dunning (1981).

The greater the competitive advantages of the investing firms, the more they are likely to engage in their foreign production; (b) Location advantages (existence of raw materials, low wages, special taxes or tariffs) Locational attractions refer to the alternative countries or regions, for undertaking the value adding activities of multinational enterprises (MNEs). The more the immobile, natural or created resources, which firms need to use jointly with their own competitive advantages, favour a presence in a foreign location, the more firms will choose to augment or exploit their O specific advantages by engaging in FDI; and (c) Internalisation advantages (advantages by own production rather than producing through a partnership arrangement such as licensing or a joint venture). Firms may organize the creation and exploitation of their core competencies. The greater the net benefits of internalizing cross-border intermediate product markets, the more likely a firm will prefer to engage in foreign production itself rather than license the right to do so.

2.2 Empirical Review of FDI Determinants

Morisset (2000) comes to the conclusion that it is possible for African countries to be successful in attracting FDI that is not based on natural resources or aimed at the local market, but rather at regional and global markets, by improving their own business climate. So, without using FDI that arise from market size and the natural resources available in the host country as an indicator of the business climate for FDI, Morisset tries to identify which Sub-Saharan Africa (SSA) countries have been able to attract FDI by improving their business environment and then investigate which policy factors have played a significant role in the improvement of their investment climate.

In 1997, it has been proved evidently that countries like Mozambique, Namibia, Senegal and Mali were among countries with the most attractive investment environments, and received more FDI inflows than countries that have a bigger local market such as Kenya and Congo; and also more FDI inflows than countries with abundant natural resources like Congo and Zimbabwe. This means that pro-active policies and re-oriented governments can generate FDI interests.

In order to improve the climate for FDI, an econometric analysis made by Morisset (2000) for 29 SSA countries over the period 1990-97 indicates that GDP growth rate and trade openness can be used to fuel the interest of foreign investors. A detailed review of the policy reforms implemented in Mali and Mozambique further indicates the following strategic actions for their recent success, beyond macroeconomic and political stability: opening the economy through a trade liberalization reform; launching an attractive privatization programme; modernizing mining and investment codes; adopting international agreements related to FDI; developing a few priority projects that have a multiplier effects on other investment projects; and mounting an image building effort with the participation of high political figures, including the President.

In their analysis, Schoeman *et al.* (2000) prove how government policy (specifically deficit and taxes) affects FDI through the estimation of a long-run co-integration equation for FDI in South Africa during the past three decades. Of special importance are the deficit/GDP ratio, representing fiscal discipline, and the relative tax burden on prospective investors in South Africa. So, the main finding is that both fiscal policy variables have a negative effect on FDI flows to South Africa. According to the authors, there is room for the South African government to transform its economy into an investor-friendly environment, by adjusting fiscal policy.

As for Asiedu (2002a), he uses a comprehensive dataset of 71 developing countries, about half of which are in the poorest region of Africa (SSA) over the 1988-97 period to analyse whether the determinants of FDI in developing countries are equally relevant for SSA. This author focuses on three main variables (return on investment, infrastructure development and openness to trade) and the results imply that Africa is different. Higher marginal product of capital and better infrastructure do not drive FDI to SSA and, although openness to trade has a positive impact on FDI to SSA, the impact is lower than non-SSA countries. Moreover, being an African country has a negative effect on FDI, due mainly to the perception that Africa is overly risky. The three policy implications are as follows: African countries need to liberalize their trade regimes and the reform must be perceived as credible by foreign investors; successful policies in other regions cannot be blindly replicated in Africa including Benin; African governments have to disseminate information about their countries to dispel the myth about the continent.

In 2002, Bende-Nabende provides an empirical assessment on the macro locational determinants of FDI in SSA through the assessment of a long-run relationship between FDI and its determinants. That study, which comprises 19 SSA countries over the 1970-2000 period, employs both individual country data and panel data analyses techniques. The empirical results suggest that the major determinants of FDI in these African countries are: market growth, less restrictive export-orientation strategy and FDI policy liberalization. These are followed by real effective exchange rates, market size and trade openness. Thus, as far as SSA is concerned, their long-run FDI positions can be enhanced by improving their macroeconomic management, liberalizing their FDI regimes and broadening their export bases.

In Lemi and Asefa (2003), the relationship between economic and political uncertainty and FDI flows in African countries is addressed. In their paper, the authors dealt first with the role of political and economic uncertainty in affecting FDI in Africa by using Generalized Auto-Regressive Heteroscedastic (GARH) model to generate economic uncertainty indicators. The study analyses FDI from all source countries (overall US FDI, US manufacturing FDI and US non-manufacturing FDI) and their responses to uncertainty, whereas previous studies disregarded how the role of uncertainty differs in industrial groups and source countries. The period of analysis and sample countries are large enough for the result to be robust, which other studies did not consider. The results of the panel study for 29 African countries over the period 1987-99 are as follows: for FDI from all source countries, the impact of uncertainty is insignificant; for aggregate US FDI, economic and political uncertainties are not major concerns; for US manufacturing FDI, only political instability and government policy commitment are important factors; for US non-manufacturing FDI, economic uncertainties are the major impediments only when coupled with political instability and debt burden of host countries; other economic factors such as labour, trade openness, external debt, and market size are also significant in affecting FDI flows to African economies.

Drawing on the empirical literature on the determinants of FDI, Asiedu (2004) provides an explanation for the deterioration in SSA's global FDI position. The author argues that SSA's share of FDI to developing countries has declined over time, because of the less attractiveness of SSA for FDI over time, relative to other developing regions. The analysis focuses on three FDI determinants (openness to FDI, good infrastructure and institutional quality) using policy-related measures (since one of the objectives of this paper is to prescribe policies that will enhance SSA's global FDI position) over the 1980-99 period.

With regard to FDI determinants, the main finding is that, SSA's experience can be characterised as absolute progress but relative decline. Because, from 1980-89 to 1990-99, SSA succeeded in reforming its institutions, improved its infrastructure and liberalised its FDI regulatory framework. Nevertheless, compared with other developing regions of the world, the degree of changes in SSA has been meagre. The policy implication that follows is the need to enhance SSA's policy environment in both absolute and relative terms.

Yasin (2005) explores the link between the two major sources of external capital needed to fill Africa's significant resource gap (FDI and ODA), by using a panel data from 11 SSA countries for the period 1990-2003. The basic assumption is that Official Development Assistance (ODA, i.e. grants and loans from bilateral and multilateral organizations such as the World Bank) may remove some of the obstacles to FDI flows and thus improve the economic conditions that attract FDI.

In line with previous studies, there is a positive relationship between bilateral ODA and FDI, which suggests that ODA granting countries have a significant influence on the locational decisions of the multinational corporations (MNCs) located in these countries. Thus, African countries need to formulate policies to enhance the economic and political relationships with donor countries. As regards multilateral ODA, the empirical findings on its influence on FDI flows are controversial to date. Yasin's estimation suggests that these ODA flows are not a critical requirement for FDI activities by the MNCs in the developing countries.

Asiedu (2006) utilises panel data for 22 SSA over the period 1984-2000 to investigate the influence of natural resources and market size *vis-à-vis* government policy, host country's institutions and political instability in directing FDI flows to the region. The results of this paper suggest that countries in SSA that are endowed with natural resources or have large markets attract more FDI. However, small countries and/or countries that lack natural resources in the region can also obtain FDI by improving their institutions and

policy environment, because good infrastructure, educated labour force, macroeconomic stability, openness to FDI, an efficient legal system, less corruption and political stability also promote FDI.

In the light of these findings, Asiedu stresses the importance of regional blocs such as the Southern African Development Community (SADC) in enhancing FDI flows to the region. In addition to expanding the size of the market, regionalism can promote political stability by restricting membership to countries with democratic political systems, as well as provide incentives for member countries to implement good policies through the threat of sanctions or the loss of access to the bloc for errant countries.

Dupasquier and Osakwe (2006) summarize the reasons for Africa's poor FDI record, based on an overview of the empirical determinants of FDI to Africa. Their main aim is to identify concrete actions or strategies that need to be adopted at the national, regional and international level to enhance FDI flows to Africa.

These actions can be summarised as follows: (a) image building through an increase in political and macroeconomic stability, the protection of property rights and the rule of law; (b) supporting existing investors through infrastructure development, provision of services and changes in the regulatory framework (relaxing laws on profit repatriation is an example); (c) marketing investment opportunities through the use of existing investors and information communication technologies instead of over-reliance on Investment Promotion Agencies (IPAs); (d) diversification of the economy; (e) liberalization of trade; (f) relative privatization in some sectors; (g) enhancing regional integration; (h) providing an external agency of restraint on domestic policies through the formation of regional groups; (i) promoting good governance through regional surveillance mechanisms; (j) initiating and encouraging infrastructure development projects at the national and regional levels; (k) improving market access at the international level through the elimination of trade barriers and subsidies on agricultural goods exported by African countries; (l) investment promotion assistance by governments of developed countries through the provision of accurate information to investors in their countries; (m) technical assistance by governments of developed countries in areas such as capacity building, health, education and industrialisation.

Finally, Fedderke and Romm (2006) focus on the growth impact as well as the determinants of FDI in South Africa. With regard to FDI determinants, they propose a model of locational choice of the investment activity between domestic and foreign alternatives and employ time-series data for South Africa from 1962 to 1996 to test for the predictions of their model.

In the context of the Johansen VECM specification, the factors that were found to either impede or induce FDI flows into South Africa are the following: labour capital ratio; market size; corporate taxation; wage costs; trade openness and the political institutional structure. The negative sign for labour capital ratio found from their estimations suggests that FDI in South Africa has tended to be capital intensive and thence the preponderance of horizontal over vertical FDI in South Africa. In addition, reducing political risk, ensuring property rights, bolstering growth in the market size, as well as wage moderation (ideally lowering real wages), lowering corporate tax rates, and ensuring full integration of the South African economy into the world economy follow as policy prescriptions from the empirical findings of this paper.

According to Morisset (2000) and Asiedu (2006), the common perception among many observers is that FDI in African countries is largely driven by their natural resources and the size of their local markets. In an econometric study on 29 SSA countries for the period 1990-97, Morisset (2000) finds that both market size and natural resources availability have a positive influence on FDI inflows, with an elasticity of 0.91 and 0.92 using panel data and 1.4 and 1.2 using cross-section data, respectively. Panel regressions presented in Asiedu (2006) for 22 SSA countries over the period 1984-2000 show that a standard deviation of one increase in the natural resource variable results in a 0.65 per cent increase in the ratio of FDI to GDP and a standard deviation of one increase in the market size variable results in a 2.61 per cent increase in FDI/GDP.

Even though the African countries that have been able to attract most FDI have been those with natural and mineral resources as well as large domestic markets, these are not the sole determinants of FDI to the region. Morisset (2000), Asiedu (2006) and many other studies that focus on Africa suggest that the list of factors influencing FDI is fairly long, although not all determinants are equally important to every investor in every location at all times (Ajayi, 2006). Then, for Benin (because of the region it belongs), the specific determinants of FDI include market size and growth, availability of natural resources, human capital costs and skills and availability of good infrastructure. Others are openness of the economy, political and

economic stability, institutional quality, investment regulation and international treaties and guarantees. Investment promotion, return on investment and other factors such as cost-related factors, concentration of other investors, investment incentives, privatization and inflows of bilateral ODA are also FDI drivers and they need to be taken into account (Table 2).

Table 2: Empirical Determinants of FDI to Africa: A synopsis of the Literature on FDI Determinants

Empirical Determinants of FDI to Africa: A synopsis of the literature FDI Determinants	Econlit references on Africa	Other references on Africa, and in the world
Market Size and Growth	Morisset (2000); Bende-Nabende (2002); Asiedu (2002a, 2006); Lemi and Asefa (2003); Yasin (2005); Dupasquier and Osakwe (2006); Fedderke and Romm (2006).	Agodo (1978); Bhattacharya <i>et al.</i> (1996); Elbadawi & Mwege (1997); Bhinda <i>et al.</i> (1999); Basu & Srinivasan (2002); Asiedu (2003); Onyeiwu & Shrestha (2004); Kinda (2010).
Availability of Natural Resources	Morisset (2000); Asiedu (2006); Dupasquier and Osakwe (2006).	Basu and Srinivasan (2002); Kolsstad & Tondel (2002); Asiedu (2003); Onyeiwu and Shrestha (2004).
Costs and Skills of Human Capital	Morisset (2000); Bende - Nabende (2002); Lemi & Asefa (2003); Yasin (2005); Asiedu (2006); Fedderke & Romm (2006).	Borensztein <i>et al.</i> (1998); Bhinda <i>et al.</i> (1999); Odenthal (2001); Kinoshita & Campos (2002); Ayadi (2011).
Quality and Quantity of Infrastructure	Morisset (2000); Asiedu (2002a, 2004, 2006); Lemi & Asefa (2003); Dupasquier and Osakwe (2006).	Bhinda <i>et al.</i> (1999); Pigato (2001); Asiedu (2002b, 2003); Onyeiwu and Shrestha (2004).
Openness of the Economy	Morisset (2000); Asiedu (2002); Bende-Nabende (2002); Lemi and Asefa (2003); Yasin (2005); Dupasquier and Osakwe (2006);	Lipsev and Weiss (1981); Balasubramanyam <i>et al.</i> (1996); Bhattacharya <i>et al.</i> (1997); Asiedu (2002); Onyeiwu and Shrestha (2004); Falk Ande Hake (2008).
Financial Development		Albulescu, Briciu and Coroiu (2010); Saibu <i>et al.</i> (2011).
Macroeconomic stability		Nonnemberg & Mendonca (2004); Mottaleb and Kalirajan (2010).
Political stability		Nonnemberg and de Mendonca (2004)

Source: The Author, 2014.

3.0 Empirical Methodology and Data

This section presents a more formal analysis of the relationship between FDI and some key determinants of FDI in Benin. Section 3.1 discusses the data and presents the regression equation. Section 3.2 contains the empirical analysis.

The theoretical framework on the determinants of FDI in WAEMU based on the reviewed theories in the previous section is provided here. There are shortcomings of the existing theories in such that no theory explains alone and fully FDI movements.

Discussion on the determinants of FDI in WAEMU which draws from Mottaleb and Kalirajan (2010) starts with the search of answer to the question “why a foreign investor invest in other countries?” or “what drives FDI to developing countries?”. The decision to invest in a foreign country by a foreign investor depends mainly on the return on investment, which is profit (Kinda, 2010).

Profit (Π) is the difference between total revenue (TR) minus total cost (TC). In functional form, Π can then be written as:

$$\Pi = f(P, Q, TC) \text{ ----- (1)}$$

$$TC = IC + OC + HC,$$

$$\text{With } \frac{d\Pi}{dP} > 0, \frac{d\Pi}{dQ} > 0;$$

$$\text{Also, } \frac{d\Pi}{dIC} < 0, \frac{d\Pi}{dOC} < 0 \text{ and } \frac{d\Pi}{dHC} < 0.$$

P = Price of the output which is mainly determined in the competitive market;

Q = Output, and TC = Total cost

IC = Input cost (i.e. cost of labour, land, interest rate, raw materials, electricity, gas, water, etc.

OC = Operation costs. It includes both financial and time costs, such as money and time required to get business/export-import license, money and time required to get gas, water, electricity, land and transaction and transportation costs.

HC = Hidden cost. It is the difference between the time and money costs declared by the government and time and money actually paid by the investors. It also includes hassle costs.

Profit will be higher in a country where foreign investors can operate their business at a low cost and can produce at full scale in a competitive price and where there is good business friendly environment (less political and economic risk). It means the variables that determine profit can equivalently determine the inflow of FDI to a particular country. It allows us in writing the following reduced form function:

$$FDI_{it} = f(P, Q, TC, E) \text{ ----- (2)}$$

Where *E* is environment (that is political and economic stability)

Substituting the TC= IC +OC+ HC into equation (2) we can re-write it as follows:

$$FDI_{it} = f(P, Q, IC, OC, HC, E) \text{ ----- (3)}$$

Subscripts *i* and *t* stands for the individual country and year respectively.

The reduced form version of the FDI function in equation (3) clearly shows the factors that influence the inflow of FDI to the host countries. According to equation (3) foreign investors will prefer to invest in countries where they can produce large amount of production at a lower cost. The size of the economy and its growth rate are seen to critically affect the inflow of FDI to a particular country. Large and fast growing economy can offer economies of scale and also can reduce the transportation and product marketing cost as products will be mostly sold in the host economy. In fact, UNCTAD (1998, 2000) classifies a group of foreign investors who mainly invest in foreign countries to serve the domestic market. These market-seeking-foreign investors thus prefer to invest in countries with large domestic market and in countries which are growing at a faster rate (that is GDP per capita, GDPPC, and GDP growth rate, GDPGR). It is however, difficult to imagine that market seeking foreign investors will invest in foreign countries completely to serve the host economies. Rather it might be case that foreign investors might also export a portion of their product to other countries as well as selling in the host economy. It means a country with small domestic market, but well-linked and open to the global market through international trade (trade openness, OPN) can also provide to the foreign investors scale economies similar to the countries with large domestic market. Thus, trade openness to global market might significantly determine the inflow of FDI. Probably, due to openness, a few small economies, such as Hong Kong and Singapore receive substantial amount of FDI (UNCTAD, 2009).

Foreign investors will prefer to invest in the countries where input cost, operation costs and hidden costs are low, because it will ensure higher profit. Countries with abundant cheap and skilled labour (human capital, HC), electricity and energy and countries with improved infrastructure, such as road, port facilities, telephone and internet (infrastructure development, InfD) might significantly and negatively affect the cost of doing business (exchange rate, Exr volatility). Thus the availability of cheap and skilled labour, electricity and energy and infrastructure thus can significantly affect the inflow of FDI by attracting cost cutting and efficiency seeking foreign (UNCTAD, 1998; Kinda, 2010). According to the discovery in the literature, macroeconomic instability is captured by the inflation rate (base on the consumer price index).

Therefore, the equation derived from this theoretical framework on the determinants of FDI is:

$$FDI_{it} = f(GDPPC_{it}, OPN_{it}, HC_{it}, INF_{it}, INF_{it}, FD_{it}, EXR_{it}, PRK_{it}) \dots\dots\dots (4)$$

Linearly, equation (4) can be rewritten as follow in the logarithm form:

$$LFDI_{it} = \lambda_0 + \lambda_1 LGDPPC_{it} + \lambda_2 LOPN_{it} + \lambda_3 LHC_{it} + \lambda_4 LINFD_{it} + \lambda_5 INF_{it} + \lambda_6 LFD_{it} + \lambda_7 LEXR_{it} + \lambda_8 PRK_{it} + \epsilon_{it} \dots (5)$$

$$\begin{array}{cccc} \lambda_0 > 0 \text{ or } < 0, & \lambda_1 > 0, & \lambda_2 > 0 \text{ or } < 0, & \lambda_3 > 0 \text{ or } < 0, \\ \lambda_4 > 0 \text{ or } < 0, & \lambda_5 < 0, & \lambda_6 > 0 \text{ or } < 0, & \lambda_7 > 0 \text{ or } < 0 \text{ and } \lambda_8 < 0. \end{array}$$

Besides labour and physical infrastructure, business environment and rules regulations relating to investment and business also affect the cost of doing business in a particular country by affecting the function of the market (Kinda, 2010). Business friendly environment with appropriate rules and regulations might significantly reduce the operation and hidden cost and allows market to function well. Thus profit seeking foreign investors might prefer to invest in countries where there is business friendly environment and the rules and regulations relating to investment and business are favourable. Socio-economic and socio-politico variables, such as regulatory framework, bureaucratic hurdles and red tape, regulations relating to initiate a new business, judicial transparency, and the extent of corruption in the host country therefore might significantly affect the inflow of FDI by affecting the efficiency, productivity and cost structure.

- | | |
|---|-----------------------------------|
| FDI = Foreign direct investment | GDPPC = Per capita GDP |
| OPN = Trade openness [(export + import)/GDP] | HC = Human capital (labour force) |
| INF = Infrastructure development | INF = Inflation |
| FD = Financial development | EXR = Exchange rate |
| PRK = Political instability (Dummy variable which is 1 if political instability and 0 otherwise). | |

3.1 Data Description and Sources

For the variables used, secondary data from International Financial Statistics (IFS-CD ROM, 2012) and from World Development Indicators (WDI, 2012) are used for this study. They are samples consisting of time series data of 31 observations for the period 1980 to 2010.

The dependent variable is Foreign Direct Investment (*FDI*) which is a variable measured by the FDI items (in the IFS or WDI over the years) as the ratio of GDP. Labour force participation rate, *HC*, (% of total population ages 15-54) is proxy by size population in the working age bracket as published in WDI. Trade openness (*OPN*) is measured by export plus import as ratio of GDP. Import is measured by total import of goods and services while export is measured by total export of goods and services. Data on other financial variables, inflation rate (*INF*), exchange rate volatility (*EXR*), financial development (*FD*) is the ratio of M₂ i.e. total credit to private sector divided by GDP), Infrastructure development (*INF*) is telephone line per 100 people collected from the International Financial Statistics and World Development Indicator.

4.0 Empirical Results

The starting point is the examination of the time series properties of the variables. Macroeconomic variables are known to be non stationarity series.

The stationarity properties among the variables in the models are examined using the standard Augmented Dickey Fuller stationary test and the result is presented in Table 3 below. The ADF test shows that all the variables are only stationary after first differencing, thus implying that the variables should enter the model in their growth rate forms.

Here, the first step taken is to establish the stationarity test and then extract from the model the variables that are identified in the literature as determinants of FDI but which are not stationary. This is followed by Johansen co-integration test, performed to explore any possible long-run relationship among the variables. This involves testing the number of co-integration vectors. The results obtained from the Johansen co-integration method are summarized in table 4.

Table 3: Results of the Unit Root Tests based on ADF Test

Series	Level	1 st Difference	Order of Integration
Log(FDI)	-1.776816	-7.838253	I(1)
Log(GDPPC)	-0.418235	-2.891411	I(1)
Log(EXR)	-1.734105	-5.097133	I(1)
Log(FD)	-0.971335	-5.263418	I(1)
Log(INFD)	0.68345	-5.058342	I(1)
Log(HC)	-2.346553	-2.797647	I(1)
Log(OPN)	-1.892498	-6.019563	I(1)
INFL	-3.773716	-7.37877	I(1)
PRK	-4.13218	-5.439366	I(1)
Test Critical values			
1%	-3.67017	-3.67932	
5%	-2.96397	-2.96777	
10%	-2.62101	-2.62299	

Note: All the variables and symbols are as defined earlier.

Source: Author's Computation

Table 4 presents the estimates for the model based on the model specified in Equation (5). The null hypothesis of no co-integration, that is $r=0$ is rejected in the model using the trace statistics. The trace statistic is greater than its critical value.

Table 5: Co-integration Test

Sample (adjusted): 1982-2010

Included observations: 29 after adjustments

Trend assumption: Linear deterministic trend

Series: LOG(FDI) LOG(GDPPC) LOG(EXR) LOG(FD) LOG(INFD) LOG(HC) LOG(OPN) INFL PRK

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)			
Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value	Prob.
None	383.3939	197.3709	0.0000
At most 1	276.325	159.5297	0.0000
At most 2	190.6547	125.6154	0.0000
At most 3	123.289	95.75366	0.0002
At most 4	82.73015	69.81889	0.0033
At most 5	49.3917	47.85613	0.0356

Source: Author's Computation, 2014

In other words, from the above table titled co-integration Test (that is Table 5), it can be inferred that there is a long-run relationship between the variables used in this model. Therefore, equation (5) can be run to identify the major determinants of FDI inflows in the Beninese economy for the period under study.

Regression of Equation (5)

From the Table 6, the following interpretations can be done:

The Beninese regression result above is perfectly in line with the *a priori* expectations that is, apart from one variable, human resources management, all the expected signs for the remaining explanatory variables are confirmed and they are significant at different levels (1%, 5% and 10% levels of significance). The constant term's value is -20.93. This implies that the model passes through -20.93 in the vertical axis meaning that if all the variables are held constant at zero, FDI will flow out of Benin Republic's economy to the level 20.93. And this result is statistically insignificant.

Table 6: FDI Determinants in Benin

Dependent Variable: LOG(FDI)

Method: Least Squares

Sample: 1980-2010

Included observations: 31

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-20.928	12.73331	-1.643549	0.1145
LOG(GDPPC)	4.376**	2.182329	2.005241	0.0412
LOG(EXR)	1.036*	0.530644	1.951667	0.0638
LOG(FD)	2.035***	0.603862	3.370498	0.0028
LOG(INFD)	0.365***	0.055313	6.605554	0.0013
LOG(HC)	-4.213**	2.200113	-1.91503	0.0329
LOG(OPN)	1.7989*	0.874012	2.057972	0.0516
INFL	-0.012***	0.001156	-10.7206	0.0029
PRK	-0.187	0.159414	-1.171531	0.2539
R-squared	0.941	Mean dependent var		4.413
Adjusted R-squared	0.919	S.D. dependent var		1.247
S.E. of regression	0.355	Akaike info criterion		1.005
Sum squared resid	2.774	Schwarz criterion		1.421
Log likelihood	-6.576	Hannan-Quinn criter.		1.141
F-statistic	43.499***	Durbin-Watson stat		1.696
Prob(F-statistic)	0.000			

Notes: *** = significant at 1% level of significance
 ** = significant at 5% level of significance
 * = significant at 10% level of significance

Source: Computed by the Author, 2014

The coefficient of GDPPC is 4.38. This implies that there is a direct relationship between FDI and per capita GDP (proxy for market size) in the short run such that a one unit increase in per capita GDP will increase the level of FDI inflows in Benin by 4.38, all other variables being held constant. This finding is statistically significant at 5% level of significance. This agrees with the literature that market size is one of the major determinants of FDI in developing countries (Bhinda et al., 1999; Morisset, 2000; Bende-Nabende, 2002; Lemi and Asefa, 2003; Asiedu, 2002 and 2006; Dupasquier and Osakwe, 2006; Fedderke and Romm, 2006; and Kinda, 2010). This is understandable because MNCs and capital owners are mainly after their own interests and profits, not for the development of LDCs. In Benin, this study confirms that per capita GDP determines FDI inflows.

The coefficient of EXR is 1.03. This implies that there is a direct relationship between FDI and exchange rate volatility in the short run such that a deterioration of exchange rate volatility by 100% increase in exchange rate volatility, will lead to an increase of the total inflow of FDI in Benin by 103%, all other variables being held constant. This finding which is statistically significant at 10% level of significance is consistent. In other words, a moderate appreciation of exchange rate volatility enhances and determines FDI

inflows in the economy of Benin. This is in line with the theory and with the point of view of Asiedu (2006), Busse and Hefeker (2007), Campos and Kinoshita (2008).

The coefficient of FD is 2.03. Here also, there is a strong positive relationship between FDI and financial development in the short run such that a unit increase in credit to private sector will bring about an increase of 2.03 unit in the inflows of FDI, all other variables being held constant. This finding is statistically significant at 1% level of significance; more so, it is in line with the finding in the literature of Saibu et al. (2011), Albulescu et al. (2010), and Alfaro et al. (2004). This finding is in line with the theory which says that a moderate increase in financial development will increase economic activities (that is growth which in turn attracts FDI) and then enhances FDI inflows, *ceteris paribus*. But when the level of financial development is weak, it deters FDI inflows because foreign money and all the financial tools are needed for the increase of the production and its linkages within an economy.

The coefficient of infrastructure development is 0.36. This implies that there is a positive relationship between FDI and infrastructure development so that an increase of infrastructure development by 100% will cause FDI to flows in Benin by 36% all other variables being held constant. This result is statistically significant at 1% level of significance. This finding is a proof that infrastructure development is also one of the major variables that drive FDI in the Beninese economy. This finding is correlated with the previous ones, especially financial development and economic growth. Also, it brings an answer to the second research question of this paper.

The coefficient of human resources management is negative (-4.21) meaning that there is a strong and indirect relationship between FDI and human capital in Benin. This result implies that a unit increase in labour force will bring about a decrease in 4.21 in the inflow of FDI, all other variables being held constant. This result is consistent and statistically significant at 5% level of significance. Even though this result is contrary to the expected one, it is conform to some findings in the literature (Samir Amin, etc.). This finding also means that the state of human resources management in the Beninese economy is not favouring inflows of FDI.

The coefficient of trade openness (OPN) is 1.798. This implies that there is a positive relationship between FDI and trade openness in the short run such that a total openness to trade in the community will enhances FDI inflows weakly by 179.8%, all other variables being held constant. This result is statistically significant at 10% level of significance. This finding confirms the view of many researchers found in the literature on FDI inflows (Albulescu et al., 2010; Chakrabarti, 2001; Morisset, 2000; Bende-Nabende, 2002; Kandieru and Chitiya, 2003; Tsikata et al., 2000; Asiedu, 2002; Noorbakhsh et al., 2001; and Singh and Jun, 1995). This finding confirms that trade openness affects FDI inflows in Benin.

The elasticity of inflation (INFL) is -0.012. This implies that there is an adverse relationship between FDI and inflation rate in the short run such that a unit increase in inflation rate will bring about a decrease in 0.012 unit in the inflow of FDI, all other variables being held constant. Inflation is a proxy for macroeconomic stability or economic environment. So, macroeconomic instability will lead FDI inflows to fall in Benin in the period 1980-2010. This result is statistically significant at 1% level of significance. This finding confirms the findings in the literature that “better business friendly environment impacts positively FDI inflows”.

Political instability’s coefficient is -0.19 implying that any political turbulence deters FDI inflows in the economy of Benin Republic within 1980-2010, all other things being held constant. But this finding is not statistically significant. This result is in line with the literature knowing that risk deters foreign private investment in Africa (Jaspersen et al, 2000; Collier and Pattillo, 1997 and 2000) meaning that no investor will take his money in an environment where there is political crisis because it will jeopardise the business activities.

F-statistic is useful for joint significance of the parameter estimates. In the case of this study and at this junction, the F-statistic (43.50) shows that the model is useful in determining whether any relationship exists between FDI and the other variables in Benin (per capita GDP, exchange rate volatility, financial development, infrastructure development, human resources management, trade openness, inflation (or macroeconomic environment), and political instability). The F-statistic also shows that the coefficients are jointly statistically significant at 1% level of significance.

The calculated Durbin-Watson statistic (D-W statistic) from the results presented in the above table (Table 6) gives the value of $1.69 \approx 2$; this shows that there is no serial correlation in the model.

The coefficient of determination (R^2) from our results is given as 0.9405. This implies that 94.05% of the variations in the FDI in Benin are accounted for by the included explanatory variables of per capita GDP, exchange rate volatility, financial development, infrastructure development, human resources management, trade openness, macroeconomic environment (i.e. inflation rate) and political instability. With this value of 94.05% for R^2 , it can be inferred that this result is therefore of good fit.

The adjusted coefficient of determination (adjusted R^2) is given as 0.9189. This means that precisely 92 % of the variations in the FDI inflows of Benin are accounted for by the included variables, after the coefficient of determination has been adjusted to make it insensitive to the number of included variables.

5.0 Summary of Findings

(i) It is found that not all the variables identified in the literature review determine FDI inflows after the empirical research through the running of some econometric regressions.

(ii) A moderate appreciation in the level of exchange rate volatility enhances and determines positively the inflows of FDI in Benin.

(iii) The level of financial development in Benin favours and encourages inflows of FDI during the period under-study.

(iv) In this same economy, the state of human resources management (or labour force) is not favouring FDI inflows in the Beninese economy during the period 1980-2010.

(v) Trade openness is found to be one of the major determinants of FDI inflows in the Beninese economy during the period 1980-2010.

(vi) Macroeconomic instability deters and does not favour inflows of FDI in the Beninese economy during the period under-study.

6.0 Policy Implication

First, in order to avoid wastage, Beninese government should not implement any how the policy drawn by some international institutions and developed countries without being sure that their proposed strategies and policies fit that economy. Rather economic decisions should be made based on the investigations made on that economy not after generalising some economic policies.

Secondly, caution should be made so as to master the movement of exchange rate (the value of US dollar in term of CFA Frank) knowing that volatility in the depreciation of foreign money will deter and discourage considerably FDI inflows in Benin.

Thirdly, innovation should be brought into the financial sector to revitalise the bank system and the financial market in order to boost FDI inflows in that economy which will favour economic growth and development.

Fourthly, knowing that educated and healthy people will favour an increase of production and productivity, policy yielding to train and form the labour force should be encouraged for it will attract more of FDI in Benin.

And finally, knowing that no investor will take his money to an unstable environment, economic and political leaders should take sound decisions that will favour business friendly environment in Benin by reducing political risk, ensuring property rights, most importantly bolstering growth in the market size, as well as wage moderation, lowering corporate tax rates, and ensuring full integration of their economy into the world economy.

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